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**Notice of Allowability**

Application No.

09/682,140

Examiner

William H. Wood

Applicant(s)

CHIANG ET AL.

Art Unit

2193

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-11 and 13-30 (renumbered 1-29).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 9/15/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Daniel J. Bedell on 25 August 2005.

The application has been amended as follows:

*Claim 1 (original numbering)*

A method for aiding debugging of program code in a computer system, the computer system comprising an input system and an output system, the program code comprising a plurality of program code statements, the method comprising:

utilizing the input system to indicate an error variable in the program code, the error variable containing an error value that differs from a first desired value;

obtaining an error set of the error variable, the error set comprising a subset of the program code statements, each program code statement in the error set being relationally connected to the error variable;

assigning a priority value to each program code statement in the error set, each priority value indicating a computed probability that the associated program code statement is an error source of the error variable; and

utilizing the output system to ~~to present~~ presenting each statement in the error set based on ~~in a manner that indicates~~ the relative ordering of the priority value of the program code statement to the other priority values of the other program code statements in the error set.

Claim 11 (original numbering)

A method for aiding debugging of program code in a computer system, the computer system comprising an input system and an output system, the program code comprising a plurality of program code statements that are repetitively executed by way of a plurality of execution cycles, the method comprising:

utilizing the input system to indicate an error variable in the program code, the error variable containing an error value that differs from a first desired value;

obtaining an error cycle that is an execution cycle in which the error variable obtains the error value;

obtaining an execution set comprising all program code statements that are executed in the error cycle;

utilizing the program code statements in the execution set to generate an error set of program code statements, every program code statement in the error set being in the execution set and also being relationally connected to the error variable; and

assigning a priority value to each program code statement in the error set, each priority value indicating a computed probability that the associated program code statement in the error set is an error source of the error variable; and

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~~utilizing the output system to presenting~~ each statement in the error set based on the relative ordering of the priority value of the program code statement to the other priority values of the other program code statements in the error set.

Cancel Claim 12 (original numbering);

Claim 13 (original numbering), line 1, change "claim 12" to --claim 11--;

Claim 14 (original numbering), line 1, change "claim 12" to --claim 11--;

Claim 15 (original numbering), line 1, change "claim 12" to --claim 11--;

Claim 21 (original numbering)

A computer system comprising:

a processor;

an output system for presenting information to a user;

an input system for obtaining data from the user; and

a memory for storing code and data for the processor, the memory comprising:

program code comprising a plurality of program code statements;

debug information about the program code;

an execution system for generating the debug information; and

a prioritizing system, executed by the processor, that utilizes the debug

information to perform the following:

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utilizing the input system to indicate an error variable in the program code, the error variable containing an error value that differs from a first desired value;

obtaining an error set of the error variable, the error set comprising a subset of the program code statements, each program code statement in the error set being relationally connected to the error variable;

assigning a priority value to each program code statement in the error set, each priority value indicating a computed probability that the associated program code statement is an error source of the error variable; and

~~utilizing the output system to present~~ presenting each program code statement in the error set ~~in a manner that indicates~~ based on the relative ordering of the priority value of the program code statement to the other priority values of the other program code statements in the error set.

### ***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance: the prior art of record fails to teach or suggest the claimed invention. Specifically, the prior art of record fails to teach or suggest *each program code statement in the error set being relationally connected to the error variable; assigning a priority value to each program code statement in the error set ... indicating a computed probability that the associated program code statement is an error source of the error variable; and presenting each program code statement in the error set based on the relative ordering of the priority value[s], as recited in independent claims 1, 11 and 21.*

The prior art of record, **Clark** (USPN 5,297,150), disclosed relationally connected variables. However, **Clark** failed to disclose the independent claims as recited, including probability of causing an error value in a particular variable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

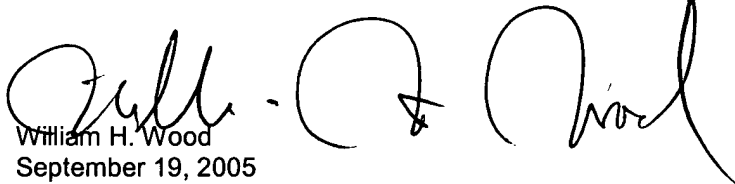
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**Correspondence Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

  
William H. Wood  
September 19, 2005



**KAKALI CHAKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100**